IMAGE

Journal of Photography of the George Eastman House

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SCENE FROM A PHOTOGRAPH FOUND IN AN AMATEUR ALBUM OF THE 1870's. The wealthy amateurs could afford to pursue photography during the days of the wet plate negative and the albumin print; and in England many such amateurs were at work. As members of the leisure class they were expected to pursue art in some form and the camera obviously gave them a ready means to cultivate their taste and indulge their elegant pastimes. They had a charming device for acquiring copies of the best prints; each one of a group made as many prints from his negative as there were members and after an exchange of prints they were mounted in scrap books. Some of these books were very elaborate, title pages in hand set type on india paper, the photographs carefully tipped in or mounted with rubber cement on fine rag paper, the scrap books were often bound in leather. What is more surprising to this generation, accustomed to amateur snapshots, many of these amateur photographs of the 70's lived up to their elegant and expensive presentation. Several of them are being shown in the Eastman House exhibits called "Masterpieces from the Collection."

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THE ORTHOSCOPIC LENS

By Rudolf Kingslake

The famous Portrait lens designed by Joseph Petzval in 1839 was originally intended to be a convertible system. There were two rear components designed, either of which could be suitably combined with the same f/5 telescope objective used in front. The *portrait* rear component, as described in a previous note in *Image,* was an instant success, and in the urge for its rapid production the alternative *landscape* rear component was laid aside and temporarily forgotten. Petzval himself referred to the second system as the "Photographic Dialyte," and intended it to be used as a landscape lens of higher aperture than the simple Landscape Lenses in common use.

With the invention of the wet collodion process by Scott Archer in 1851, photographers became able to take indoor photographs of architectural subjects. This new potentiality created a demand for better lenses, and in particular for lenses of greater rapidity and a wider field than the f/15 landscape lenses then available, and above all for lenses free from the objectionable curvilinear distortion inherent in simple landscape lenses. Many attempts were made by opticians to develop a lens meeting these requirements, and when the cry for distortionless lenses was at its loudest, Petzval recomputed his 1839 landscape lens, made a trial sample, and (since he had quarrelled with Voigtländer) commissioned Dietzler in 1856 to manufacture the lens. Petzval applied for an Austrian patent on the design in 1857, and the lens was put on the market in that year.

As soon as Voigtländer heard of the new lens, he recognized it as the second Petzval design of 1839, and at once began production independently, over the violent protests of Petzval. He chose the name "Orthoscopic" since freedom from distortion was the chief demand of photographers at that time. The new lens was given tremendous and altogether unprecedented advance publicity, especially in England, and readers of *Photographic Notes* and the *British Journal of Photography,* for instance, were promised a panacea for all their difficulties. For a considerable time the new lens was much in demand, and we are told that its reputation was such that timid photographers scarcely dared exhibit a picture that had *not* been made by its aid! Its manufacture was taken up by Ross in London and Harrison in New York. But in spite of the promises of the manufacturer and the claims of its supporters, careful workers discovered that it actually did exhibit distortion, of the unusual pincushion type, and its field was decidedly curved, although the central definition at f/10 or f/15 was excellent. The lens was thus eminently suited to the photography of large groups in the open air where the distortion and field curvature were unimportant and where the excellent definition would be appreciated. Because the lens failed to realize the properties implied in its name, it quickly lost its appeal and was soon forgotten, although its use continued for some years in Germany and Austria. Modifications of the same general type were attempted later by other opticians but without significant success.

The George Eastman House is fortunate in possessing two of these lenses made by Voigtländer, of focal length 326 and 443 mm, with maximum apertures of f/15 and f/12 respectively (although early descriptions of the lens indicate its maximum aperture was f/8). They contain a front and a rear component spaced apart, with a diaphragm behind the rear lens, the front component being a telescope objective of f/5 aperture as in the Portrait lens, and the

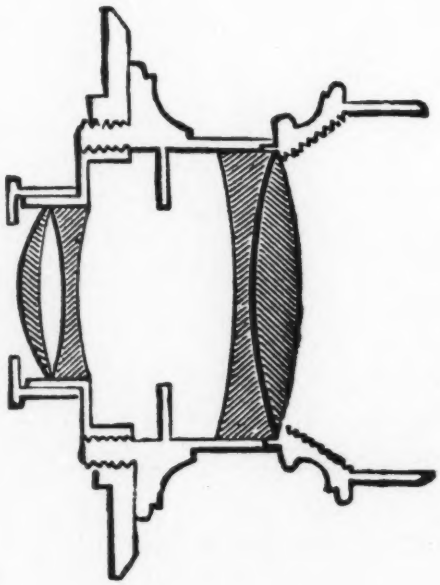


DIAGRAM OF THE ORTHOSCOPIC LENS

rear component consisting of a strong biconcave negative lens and a weaker positive meniscus lens behind it (see diagram) giving the rear component an overall negative power. In modern parlance the objective would therefore be regarded as a moderate telephoto having a total length equal to 98 percent of the equivalent focal length. The length of the lens itself and the power of the rear component were evidently chosen by the designer to give a compromise between pincushion distortion and inward field curvature, since any attempt to correct one of these faults merely aggravates the other; the shapes of the rear elements were chosen for spherical and coma correction. The lenses cover a plate having a diagonal about equal to the focal length, that is, a semifield of 26°. Apparently in the orthoscopic lenses by Ross and Harrison the diaphragm was mounted inside the lens and the rear component had almost the same diameter as the front.

GEORGE EASTMAN'S EXPERIMENTS WITH DRY COLLODION

When George Eastman took up photography as an avocation, one of his first purchases was an instruction book, Carey Lea's *Manual of Photography,* for which he paid $3.25 on October 20, 1877. The author was a Philadelphia amateur photographer who was most knowledgeable in chemical matters: at the age eighteen he contributed a report of proximate analyses of coal in Pennsylvania region to the American Journal of Arts and Sciences. He became absorbed in photography, as an amateur as well as a scientist, and the first edition of his Manual, published in 1868, was soon exhausted. In 1871 he wrote a second edition, which he printed at his own expense. The Eastman House copy of this *Manual* is a well-made book of 439 pages, illustrated with drawings. Our copy is bound in vivid blue: beneath the title on the spine is proudly stamped "Third Thousand," and the initials "B & W," for Bannerman and Wilson, photographic publishers who took over the sale of the book.

When Carey Lea wrote his book, the mechanics of photography differed from ours: the photographer had to make his own plates. Just before exposure he coated one side of a piece of glass with iodized collodion, pouring a little pool of the viscous material on the center of the plate and allowing it to flow over the surface. "This is all to be done quite cooly," Lea advises, "and yet without loss of time. The collodion must go *full* to the edge of the plate all around, and with a little practice this is accomplished with great ease and without spilling a drop." The plate with its tacky coating was then immersed in silver nitrate, put into a holder while still wet, exposed, and developed.

This was the technique which George Eastman learned. Like every other one of the handful of amateur photographers intrepid enough to tackle photography, George Eastman was dissatisfied with this exacting technique.

There were two other ways of sensitizing photographic plates in such a way that, after the coating had *dried* it could still be used. One method was to add silver salts to the collodion before it was applied to the plate, and this was commonly called collodion emulsion. The second method was so new that it did not appear in Carey Lea's book. In 1871 Dr. Maddox showed how gelatin could be a medium for attaching the silver salts to glass plates.

The dry collodion process was first published by Sayce and Bolton in 1864. Carey Lea made a number of changes in the procedure, which became internationally adopted. First, he made collodion, by dissolving pyroxyline (better known as gun cotton) in ether and alcohol, and adding to it cadmium bromide and ammonium bromide. To each ounce he added two drops of aqua regia—a mixture or hydrochloric and nitric acid. Next he proceeded to dissolve silver nitrate in alcohol, by heat. The silver nitrate solution was then added to the collodion bit by bit, shaking constantly. This operation had to be done in the dark. After filtering, the sensitized collodion was poured on the plate, and allowed to set. The plate was washed in several changes and dried. Finally the plate was bathed in a preservative (Lea recommended a solution of pyrogallic acid, alcohol and gum arabic) and dried.

In contrast to this process, the new gelatin technique was a great simplification, and George Eastman soon gave up working Lea's technique for the new method, which he learned about from reading British magazines. It is characteristic of his curiosity and thoroughness, however, that even after he had given up the dry collodion process, he wrote Carey Lea the detailed letter which we reprint here, in which he carefully recorded his laboratory procedures. The original letter is now in the possession of Miss Elizabeth Lea, to whom we are indebted for the biographical material.

Rochester, New York
Feb. 6, 1879

Mr. M. Carey Lea
Shoemakerstown, Pa.

Dear Sir:

A year ago when I commenced to study photography as an amateur, one of my first investments was your manual from which I have derived a great deal of valuable information. I soon turned my attention to dry plates first trying your chlor-iodo-bromide formula but failed in every attempt to emulsify the iodide. At last I gave it up and tried gelatino-bromide in which process I have overcome all the difficulties except one. I still wished however to learn something of the Collodion process and after reading up all I could find on the subject in the British Journal and Br. Journ.-Almanacs, I thought I would try your formula again using a perfectly fresh sample of iodide of ammonia. I may as well say that I used in all my experiments Alwood's alcohol, Powers & Wightman's concentrated ether, the Amer. Optical Co.'s Emulsion Cotton, and Cooper's silver and haloids. I tried emulsification in the following ways, dissolving the silver in a test tube in half its weight of water and then adding the hot alcohol:

1st. I tried pouring the silver into half the collodion by degrees and then adding a little at a time the rest of the collodion.

2nd. Dissolved the bromides and aqua regia in half the collodion and the iodide in the other half. Slowly added silver to chlorobromised part and then added iodised part.

3rd. Followed directions in Manual except in regard to dissolving the silver without the water which I could not succeed in doing although the silver was pulverized.

4th. Same as No. 3 except heating the collodion to almost boiling point before adding silver.

These experiments were tried with two ounces emulsion in a four oz. tall sample vial and afterwards in a 10 oz. bottle, with the invariable result except in No. 1 of a very coarse deposit. No. 1 gave a fine deposit but in the morning the silver had settled on the bottom of the bottle and no amount of shaking would again suspend it.

Working under the same conditions, I have never failed to get a fine deposit with plain zinc bromide. In view of these facts, I beg leave to ask the following questions:

1st. Can you suggest the cause of my failures?

2nd. Do you still use your formula in preference to others published since?

3rd. Would it be practicable to add an organifier directly to the emulsion before pouring out to set, and then drying the pellicle before washing to obtain greater density?

If I did not think that I had faithfully tried your formula, I should hesitate to trespass upon your good nature to the extent of this long letter. As it is, my failures only increase my desire to make some good pictures with the formula.

I am, yours very respectfully,

George Eastman

ALFRED EISENSTAEDT

25 Years of Photography

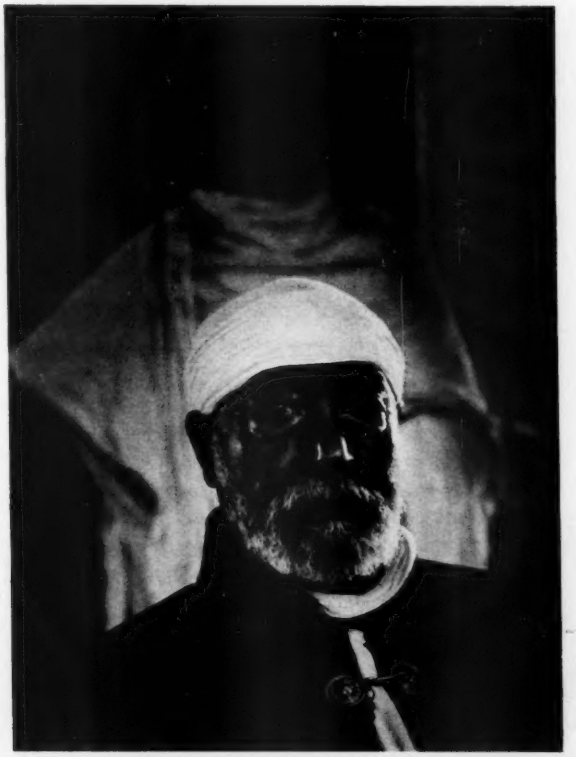
The photographs reproduced here are from the exhibition at George Eastman House covering twenty-five years of photography by Alfred Eisenstaedt. The show, sponsored by LIFE magazine, will be redesigned for touring museums and photo-journalistic short courses around the country.

While too few pictures are reproduced to give any idea of the great variety of subject matter that this photographer regularly handles, scope is one of the special contributions he has made to the idea of what a photo-journalist is.

Gala première at La Scala, Milano, Italy, 1933.

Cocoa cargoes are paddled from the beaches to waiting ships. Accra, Gold Coast, Africa, 1953.

Winston Churchill campaigning before a general election in Great Britain, October, 1951.



Prime Minister of Ethiopian cabinet listening to a speech by the Emperor, Haile Selassie, Ethiopia, 1935

Alfred Eisenstaedt, now 55, was given his first camera at the age of 13 in Berlin, sold his first picture to the *Berliner Tageblatt* in 1928 and turned professional. He was a pioneer in candid photography and the picture story. As Jean Walrath said of him he photographs "everybody that is anybody and anybody that is everybody." He photographed Ethiopia just before the Italian invasion and produced one of his most successful series, and came to America immediately afterwards in 1935. He was one of the group that produced the experimental magazine that later became *Life* and has been on that staff ever since, with 1200 assignments and 52 covers to his credit. His best work seems to be with individual personalities, he photographs them in classic photo-journalistic style so that we say of his people, "this is what they looked like." Through the portraits of Eisenstaedt future generations will be able to rub elbows with the significant men of our own period.

THE MIRROR OF PHOTOGRAPHY

A Japanese book on photography, published in 1867, has just been added to the Eastman House library. The little volume, 4¾ x 7¼ inches, has 56 pages, with numerous wood-engravings of apparatus. It was written by Yoky Gakujin, "Willow River Scholar," the literary name of Yanagigawa Shunsan or Ryusen Shunsan, and is titled Shasin-Kyo Zusetsu, "The Mirror of Photography."

Mr. James Cahill, of the Metropolitan Museum of Art, who transliterated the title and author's name, states that the preface, written in Chinese, is very scholarly and pedantic. He has been kind enough to provide a rough translation:

"The necessity for pictures extends from the earliest times to the present; they can reduce a thousand miles to the space between eyebrow and eyelash, without losing the form or diminishing the spirit, all in the most detail. In this lies the necessity for painting. Painters say 'Ghosts and goblins are easy to do, dogs and horses hard.' This is ridiculous. This is the reason for the origin of taking photographs.

"In the Bunsei era (1818-1829) the two gentlemen Niépce and Daguerre invented the Photograph Mirror using iodine, mercury and silver. They took them by sunlight . . . no one could equal them with a brush. (Various others after that worked on the problem, and made images on paper, on stone, on steel, and on glass.) Thus distant people could enjoy famous views, and those afterwards could visualize former philosophers. Historians believe that through books and paintings one can rub elbows with the men of old and talk with them, and now this is realized more perfectly than ever before. Thus, although it is a small technique, in its effect on the world it is anything but small."

A PAGE FROM *SHASHIN-KYO ZUSETSU* published in Japan in 1867. The book has recently been added to the Eastman House collection.

BOOK REVIEWS

1955 PHOTOGRAPHY ANNUAL, by Editors of Photography Magazine, Ziff-Davis, New York, 1954. 250 pages, 266 illustrations. $1.00.

PHOTOGRAPHY YEAR BOOK 1955, by Norman Hall and Basil Burton, Press Centre Ltd., London, 1954. 192 pages, 156 illustrations. 25 shillings.

U. S. CAMERA ANNUAL, edited by Tom Maloney, U. S. Camera, New York, 1954. 316 pages, 314 illustrations. $6.95.

UNIVERSAL PHOTO ALMANAC, Falk Publishing Co., New York, 1954. 254 pages, 160 illustrations, $2.50.

All four of the annuals contain pictures that will be called splendid by people whose tastes vary widely, all of them publish pictures by well known photographers and all of them attempt to unearth the talented youngster. Edward Weston is featured this year in *Photography Year Book* (London) with five pictures; Paul Strand is featured in *U. S. Camera* with twenty-two photographs from his recent work in France and Italy.

The usual excitement that attends the appearance of the annuals at the end of the year was attenuated in 1954 by the publication of the *Photography Annual* (New York) in celebration of the 4th of July. Otherwise they follow their usual patterns.

U. S. Camera is boisterous and excitable, rather rambling, and in attempting to appeal to all levels of taste does not overlook cheesecake; it has a growing awareness that photography is a common language for the world, and achieves a certain unity by vitality alone.

Photography Year Book (London) sectionalizes its photographs on a national basis, which does not seem quite strong enough to unify the helterskelter nature of annuals. It exercises a refinement in picture selection that is refreshing. The British still admit that human beings are made of flesh and so most of the portraits, nudes, and other exposed parts of the body are rendered with a sense of substance, weight and texture, the results are perfectly charming.

Photography Annual (New York) organizes its pictures on a frame work of "how to," and while this frame work is slight it is enough to give the great variety of the pictures a certain welcome sense of unity. This is probably the most outstanding feature of the book. The selection of pictures often shows a deft touch, and is never heavy handed. The layout indicates a clever understanding of the problems of size to subject relationships and achieves a maximum of interest. There is considerable awareness of the importance of the photographic elements in a photograph as opposed to news significance.

Universal Photo Almanac continues to be a mine of information with its formulary and market guide brought up to date, its bibliography and articles on various aspects of photography. The picture section is a little shorter than usual and somewhat more conservative in its choice of pictures. The whole is aimed at an everyday audience, with Lew Peralla's article "There's a Way to LOOK at Photographs" an echo of the outstanding 1951 issue.

In looking over annuals of ten and twenty years ago the fact is brought home that while the fashions in pictures have changed the basic idea of the annual has not. Consequently one wonders whether the heterogenious collection of pictures is the best way of communicating with our present generation. Perhaps it is time to invent a new way, perhaps our annuals are out of date.

PHOTOGRAPHIC ARTS AT THE UNIVERSITY OF ROCHESTER

In 1945 Nancy Newhall pointed out, in the fourth volume of the *College Art Journal*, that the art-historical approach could, with profit, be applied to the study of photography. She visualized undergraduate courses which might comprise " . . . the main developments of the history of photography, an appreciation of its chief esthetic movements and achievements, a survey analyzing and evaluating its various branches and their relation to contemporary life."

Just such a course is now offered by the University of Rochester, in cooperation with the George Eastman House, for academic credit. Last year 46 students were enrolled.

The one-semester course is sponsored by the Art Department, and has the format of introductory courses in the history and appreciation of the Fine Arts. Like these prototypes, it is non-technical, and is designed to make students aware of the great potentials of photography as a means of communication and a medium of expression. The formal lectures—which comprise one-half of the instruction—are fully illustrated with lantern slides and frequent demonstrations. The other half of classroom work is informal discussion, often with invited guests who are specialists of renown.

Without the vast resources of the George Eastman House, the course would be virtually impossible to give. Since its foundation in 1948, the George Eastman House has built up the largest collection of historical material on photography and cinematography in the world. The collection covers all phases of photography, from the earliest days of the daguerreotype to the present. This material is available to students for special research, on the graduate as well as undergraduate level. By special arrangement, one candidate for the Master of Arts degree is writing a thesis on the great American daguerreotypists, Southworth & Hawes.

It is obvious that the art of photography cannot be divorced from science; like architecture, photography is an art-science. Nor can it be separated from other fields, such as social history, psychology, and—particularly—the study of the written word. The course, therefore, is of interest to a wide cross section of the student body. Recognizing these varied interests, the faculty has permitted the new course to be applied, on an elective basis, to concentration requirements in other fields than the Fine Arts.

The establishment of the course puts into sharp focus the pitiful state of the history of photography, which Mrs. Newhall complained of in 1945. Appropriate text books which are in print and within the budget of the average student are few. The basic texts of the inventors are to be found only in books of such great bibliographic rarity that they cannot be assigned for reading. Much of the most important writing has never been translated. Scholarly apparatus which is taken for granted in other fields does not exist in the history of photography: we have yet to compile such dictionaries as Grove and Bartsch (to name the fields of music and printmaking). Historian J. M. Eder blundered stupendously in his *History of Photography*, yet no commentator has come forward to correct the blunders and corroborate the many important contributions now buried. And while there are bibliographical tools for the student of present-day photographic science, the rows upon rows of 19th century photographic periodicals in the several great photographic libraries yield their information only to those who patiently search each volume, page by page. "It is a vast field," wrote Nancy Newhall of photo history. "Active research and publication in scores of colleges and universities in the country would scarcely be too much to cover it."

The University of Rochester is proud to be one of the pioneers. It is hoped that the success of the introductory course will be sustained, and that eventually it may be possible to add courses on such specific fields as the motion pictures, photo-journalism, and creative photography. But before these can be given there must be more than a handful of photo-historians in the world, and perhaps the most useful function of the University of Rochester course will be to attract students to a field which has yet to be explored and which those of us who have been concerned with for two decades still find a constant challenge.

"REVERON": AN ARTISTIC ART FILM

Last year South America lost one of its most fascinating painters with the passing of the Venezuelan, Armando Reveron. Fortunately, a rare and sensitive film document of Reveron's work and his life was completed in 1952 by Miss Margot Benacerraf.

Miss Benacerraf, a talented Venezuelan writer, graduated from the Paris Institut des Hautes Etudes Cinematographiques with the three-reel motion picture about Reveron and his painting as her first film.

Reveron is treated with human and cinematic insight altogether rare in motion pictures that have appeared on artists. The film was acclaimed at the Berlin Festival of 1953, for the completely original presentation that it is. It is a picture that not only brings to the screen fresh methods of displaying an artist's work on film, but it is one which somehow brings the artist himself to the spectator as a strange, unforgettable personality who becomes visually, completely integrated with his own paintings as they are shown.

The late Venezuelan painter **Armando Reveron. From the film "Reveron" made in 1952 by Margot Benacerraf.**

The film was made in Macuto where the painter is shown at work in his primitive dwelling, a picturesque beach-side hut on the Caribbean. Reveron appears to be utterly oblivious of the camera as he works on a self portrait with engrossingly unorthodox technique.

Dangling from the rafters of his hut are life-size dolls made of burlap and rags, their faces luridly painted by the artist and used as models—models in memory of the nights of his youth in Spain where Miss Benacerraf's commentary tells us, the young painter could be seen in "nocturnal escapades by the quiet street corners, under the full moon

From the 1952 motion picture **"Reveron." Armando Reveron shown working on a self-portrait.**

among the somber trees where he begins to search among the shadows inhabited by enigmatic women who are ever waiting, indolent, stretched out among the rocks—or are they pillows?—in the depths of the blue night, where mystery shimmers and where ghostly processions develop—"

No procession could be more ghostly than Miss Benacerraf's haunting images of Reveron's suspended rag-doll models. Slowly twisting at the ends of the ropes about their necks, they are pendantly ominous. There is a rare nightmare quality about their sagging, swaying, burlap bodies, for the faces that Reveron has given them have by the magic of the artist's memory, endowed them all with the hallucination of life.

The bulk of Reveron's painting is held in private collections and by the Museum of Fine Arts in Caracas. Miss Benacerraf's remarkable film is a splendid vehicle for sharing with the world, the work of an important contemporary artist. Best of all, that sharing is done in turn, by an artist.

James Card

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